*STATE FOREST LAND*
**ENVIRONMENTAL CHECKLIST**

**Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

**Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

**Use of checklist for nonproject proposals:**
Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

   Timber Sale Name: Cougarilla Contract Harvest  Agreement #: 30-076249

2. Name of applicant: Department of Natural Resources

3. Address and phone number of applicant and contact person:

   Department of Natural Resources
   950 Farman Ave N
   Enumclaw, WA 98022-9282
   360-825-1631
   Contact Person: Edward Keeley

4. Date checklist prepared: 08/9/2004

5. Agency requesting checklist: Department of Natural Resources

6. Proposed timing or schedule (including phasing, if applicable):

   a. Auction Date: Sorts will be sold 05/24/2005. Harvester will be selected approximately 2/22/05.
   b. Planned contract end date (but may be extended): Harvest contract will expire 10/31/06. The log sorts will be sold in two phases with the first phase including as much volume as possible and consisting of an auction date of 5/24/05 and logs delivered from the auction date through approximately November 2005. The second phase consists of the remaining volume that was not harvested in 2005 with an auction date in April or May 2006 and the logs delivered from the auction date through approximately November 2006.
   c. Phasing: 2005, 60 % of the volume (percent is variable)
      2006, 40 % of the volume (percent is variable)

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   *Timber Sale*

   a. Site preparation: None

   b. Regeneration Method: None

   c. Vegetation Management: None

   d. Thinning: Additional variable density thinnings will be scheduled as the thinned stand develops. The development of the stand will be assessed on a periodic basis and subsequent entries will be scheduled at that time.

Roads: The roads that are part of this proposal will receive periodic road maintenance such as grading; ditch cleanout, and vegetation management, during harvest activities. The mainline haul roads outside the harvest area will be used for future forestland management activities such as timber harvesting, recreation, and fire control and will be maintained as part of a road maintenance plan for the Tahoma Block. Temporary construction will be abandoned within the proposal area following harvest. The abandonement of roads as part of this proposal will be in accordance to the abandonment plan as described in the Forest Practice Application and Road Plan and meets current Forest Practice Standards.

Rock Pits and/or Sale: Rock for the construction of the landings and surfacing for the new road construction may come from the following existing rock sources:

- The Zig Zag Pit located in the SW ¼, Sec 2, T14N, R6E, W.M.
- The Griffin Mt Pit located in the SE 1/4 SW 1/4, Section 25, T14N, R6E, W.M.
- The Ruby Hill Pit located in the SW 1/4 NE 1/4, Section 31, T14N, R6E, W.M.

Additional rock may come from sources developed on site. These new pits are located in:

- Source One located in the SW¼ NE ¼, Section 8, T14N R6E, W.M.
- Source Two located in the SW ¼ NW ¼ Section 8, T14N, R6E, W.M.

All rock pits will remain open for future use such as; surfacing of timber sale roads and routine road maintenance.

Other: None.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐303 (d) – listed water body in WAU: ☐temp ☐sediment ☐completed TMDL (total maximum daily load):
☐Landscape plan:
☒Watershed analysis: North Fork of Mineral Creek Watershed Analysis *
☐Interdisciplinary team (ID Team) report:
☒Road design plan: Road Plan, dated 8/20/04
☒Wildlife report: Wildlife memo by Heather McPherson, dated 9/7/04
☒Geotechnical report: Geologic report by Ana Pierson, dated 9/24/04, and addendum report by Ana Pierson, dated 11/8/04
☒Other specialist report(s): Hydrologist memo by Jim Ryan, dated 7/21/04 and memo and email by Tami Riepe, dated 8/26/04 and 10/20/04, respectively
☐Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):
☒Rock pit plan: Included in the road plan, dated 8/20/04
☒Other:

1) Owl habitat surveys for 1996.
2) Forestry Handbook (1999).
3) State Soil Survey
4) GIS WAU Analysis: Maps and data pertaining to Dispersal Habitat, Mass Erosion and Erosion Potential, Hydrologic Maturity and roads per square mile, rain-on-snow zone. This information has been adjusted where more recent and accurate proprietary data exists.
5) DNR Trax System/P&T Special Concerns Report.
6) Endangered Species Act (ESA) 1973.
7) Nisqually River Management Plan.
8) Habitat Conservation Plan
9) Department of Fish And Wildlife, Priority Habitat Species (PHS)

*The proposed harvest area is in the Reese Creek and North Fork of Mineral Creek WAUs. Only the North Fork Mineral Creek WAU has a completed and approved watershed analysis.

*Referenced documents may be obtained at the South Puget Sound Region office in Enumclaw during the SEPA comment period.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒HPA ☐Burning permit ☐Shoreline permit ☒Incidental take permit ☒FPA ☒Other:Board of Natural Resources Approval

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

The Cougarilla Timber Sale is a variable density thinning. The prescriptions are designed to enhance habitat in stands that are currently considered "non-functional" habitat within designated Dispersal Management Areas. It is expected that thinning thinning these stands now will move them towards a more complex forest structure over time. The proposal is located within the Reese Creek and the North Fork Mineral Creek WAUs. It is a contract logging sale where the logger will be hired by the DNR and will work directly for the DNR Contract Administrator. The original project area selected for consideration was approximately 1,500 acres in size and was reduced to a maximum of 1,223 acres due to protection measures put in place for the streams, wetlands, and unstable soils. (Acreage is described as maximum since the harvest area will be reduced as the harvester identifies other potentially unstable areas and riparian areas and marks the boundaries around these features.) Sale boundaries are currently delineated by natural features (streams and ridges), roads and stand type changes as approximately identified on the the timber sale map. These boundaries will be revised as the harvester identifies and excludes from harvest unstable slopes and riparian and wetland areas per the geologic report and addendum report, Schedule C and Schedule D. The proposal consists of a maximum of 1,223 acres of thinning in stands that range in age from 40 to 70 years old and approximately 35,864 feet of road construction and 8,700 feet of pre-haul maintenance. Temporary roads will be abandoned following harvest.

Under this proposal, the harvester is required by DNR to operate according to prescriptions (included as schedules in the contract) and provide a harvest plan to DNR to be approved by the Contract Administrator and Forest Practices. Therefore, current boundaries shown on the timber sale map are expected to change as the harvester implements these prescriptions for unstable slopes, streams and wetlands, etc.

Unit #1

Estimated Volume: 8,274 mbf
Maximum acres in proposal: 732
Type of harvest: Variable Density Thinning
Logging system: Ground based on slopes less than 40 percent slope and cable on slopes greater than 40 percent
Roads: Refer to Road activity summary in A 11.c below
Landings: 4 Acres
Rock pits: Refer to Rock Pits in A 7 above.
Other timber sales: None
Special forest products sales: None

Unit #2

Estimated Volume: 8,264 mbf
Maximum acres in proposal: 491
Type of harvest: Variable Density Thinning
Logging system: Ground based on slopes less than 40 percent slope and cable on slopes greater than 40 percent
Roads: Refer to Road activity summary in A 11.c below
Landings: 12 Acres
Rock pits: Refer to Rock Pits in A 7 above.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

The proposed harvest units are located on gently rolling terrain to moderately steep hillsides with upland benches. Roughly half of the proposed harvest area is on terrain steeper than 40 percent. Elevation of proposal area ranges from 1,592 feet to 2,609 feet.

The majority of the stands are hydrologically mature 60 to 70 year old second growth timber and are within a designated Northern Spotted Owl Dispersal Management Area.

Upland species such as deer, elk, black bear, and cougar use the proposal area. Beaver, rough-skinned newts, amphibians, and cutthroat trout are known to reside and/or use the streams and associated riparian areas. Plants such as salmonberry, devils club, Vaccinium species, Oregon grape, and sword fern are common understory species within the proposal. These species plus skunk cabbage, and sedges are found within the riparian buffers adjacent to the proposal.

Short-term objectives:
1) Maintain the residual stands after thinning as dispersal habitat.
2) Accelerate the development of the following forest characteristics; large trees, high crown ratio, multiple species composition, snags, and large woody debris.
3) Create revenue for the trust by selling timber removed during the thinning operation.
4) Establish research plots to monitor development of the stands after thinning.

Long-term objectives:
1) Timber Stand Improvement: a series of intermediate cuttings will be scheduled as needed, as the thinned stand develops. The objectives of each treatment will be to stimulate tree growth, enhance habitat by promoting structural and species diversity and create revenue.
2) Habitat Management: Create, maintain and enhance the components within the developing stands with each succeeding treatment, as part of the overall objective to create or maintain quality spotted owl dispersal and other wildlife habitat.
3) Resource Protection: The protection of soil productivity and water quality will remain priorities. Each harvest prescription will be crafted to prevent soil erosion, and limit compaction. Existing large coarse woody debris will be left to contribute to site productivity. Management activities within the established RMZ's will be crafted to protect water quality and existing wildlife habitat.
4) Create a sustainable source of revenue for the trust.
5) Continue monitoring of stands after each treatment

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

| Type of Activity | How Many | Length (feet) (Estimated) | Acres (Estimated) | Fish Barrier Removals (#) |
|---|---|---|---|---|
| Construction | | 35,864* | 49 | None |
| Reconstruction | | None | | None |
| Abandonment | | 18,208 | 25 | None |
| Bridge Install/Replace | 0 | | | None |
| Culvert Install/Replace (fish) | 0 | | | None |
| Culvert Install/Replace (no fish) | 60 | | | |

**Length and locations are approximate and is expected to change from shown on the timber sale map to accommodate operational needs.*

The proposal includes 8,700 feet of existing road that will be surfaced with rock from the Zig Zag Pit, for pre-haul maintenance. The 2 Road crossing at Reese creek is scheduled to be replaced, but is not part of this proposal. During the closure for this replacement, an alternative haul route will be used. The alternative route includes the following roads on DNR land; 2 Road, 3 Road, and 4 Road to the junction with the Murray Mainline (1 Road). The haul route would then cross onto the West Fork Tree Farm managed by the Murray Pacific Corp. The Murray Mainline would be followed to the town of Mineral.

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

Sections 2, 5, 6, 7, 8, 9, 16, 17 and 18 all in Township 14 North, Range 6 East, W.M.

b. Distance and direction from nearest town (include road names):

The proposal is southwest of Ashford, approximately 5 miles by road via Highway 706, and the 1 and 2 Road system.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

| WAU Name | WAU Acres | Proposal Acres |
|---|---|---|
| MINERAL, NF | 17545 | 1031 |
| REESE CREEK | 4779 | 192 |

13. *Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)*

| Name of WAU or sub-basin | Acres | DNR managed acres | Private managed acres | Percent DNR managed land | Percent private managed land | Proposal Acres |
|---|---|---|---|---|---|---|
| Reese Creek | 4,779 | 4,546 | 234 | 95 | 5 | 192 |
| NF Mineral Ck | 17,545 | 13,885 | 3,660 | 79 | 21 | 1031 |

The table below reports recent timber harvest activity within the last seven years on DNR lands, as well as future planned timber harvests on DNR lands. The same chart also reports recent past harvesting on private lands, but no attempt was made to predict future timber harvests on private land. Data for DNR harvests was compiled from the DNR's GIS database. Data for private harvesting was estimated from the attached WAU maps created in 2004.

| NAME OF WAU | DNR ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS + SOLD TIMBER SALES NOT HARVESTED YET ( WILL BE EVEN AGED HARVESTING) | DNR ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS | DNR PLANNED HARVEST ACRES WITHIN NEXT FIVE YEARS | PRIVATE ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS | PRIVATE ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS |
|---|---|---|---|---|---|
| Reese Creek | 325 | 0 | 500 EVEN-AGED<br>1300 UNEVEN-AGED | 172 | 0 |
| NF Mineral Ck | 41 | 0 | 1700 UNEVEN-AGED | 0 | 0 |

The Reese Creek WAU is 4,779 acres in size, 5% is in private ownership, and the remaining 95% is managed by the Department of Natural Resources. In the past seven years on private lands within the WAU, approximately 14% of the land base has had some form of Forest Practices harvest or activity. In the past seven years on the DNR managed lands within the WAU, approximately 3% of the land base has had some form of Forest Practices harvest or road activity. The DNR managed lands within the WAU have had permits on approximately 0.4% of the land base per year over the last seven years. This rate of harvest will increase to an average 1%, until minimum dispersal levels have been reached. In the next five year period a combination of regeneration harvests and variable density thinnings will be used to harvest timber from the area. The variable density thinnings will be designed to improve dispersal habitat.

The road maintenance schedule for both WAUs is on track to have all fish blockages removed by 2015. Much of this work will be accomplished over time in conjunction with several timber sales, currently in the planning process. In addition to the fish blockages any undersized culverts found as part of the planning processes, will be replaced.

## B. ENVIRONMENTAL ELEMENTS

### 1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☐Mountainous, ☒Other: Flat to Steep Slopes

*1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).*

The Reese Creek WAU is flat or rolling in that portion of the WAU adjacent to the Nisqually River. The majority of the WAU's acreage is in the Reese Creek drainage. The slopes in this area vary between 0 and 10 percent. It abruptly changes to hilly and steep slopes in the higher elevations of Reese Creek. The upper portion of the WAU near the headwaters of Reese Creek contain slopes that exceed 75 percent, however most slopes in this portion of the WAU range between 30 percent and 50 percent. The elevation range for the Reese Creek WAU is 1,600 feet near the Nisqually River, to a high of 3,600 feet on the upper ridges of the WAU. The annual rainfall within the WAU is between 50 and 70 inches, mostly falling between October and June. The temperatures range from a low of 10 degrees Fahrenheit at times in the winter to highs of 90 degrees or more during the summer. In areas above 2,500 feet snow normally covers the ground from December through March. The primary timber types are Douglas fir and western hemlock, although noble fir and silver fir are found in the higher elevations of the WAU. The majority of the WAU has been harvested at least once over the past 90 years. The majority of the private lands in the WAU are in plantations less than 25 years old.

The North Fork Mineral Creek WAU runs northwest to southeast. The topography within the southeast portion of the WAU is generally steep and mountainous. In the northwest area of the WAU the topography is flat or hilly. Slopes generally range from 15 percent to 100 percent, with average slopes varying between 30 percent to 60 percent. Elevations range from 1,400 feet, on the North Fork of Mineral Creek to 5,218 feet at Griffin Mountain. All topographical aspects are present within the WAU. The climate is moderate with a precipitation range of 80 to 100 inches per year. The major timber types are noble fir, pacific silver fir, Douglas fir, western hemlock and western red cedar. Stands of red alder and black cottonwood can be found adjacent to the streams. The annual rainfall within the WAU is between 80 and 110 inches, mostly falling between October and June. The temperatures range from a low of 10 degrees Fahrenheit at times in the winter to highs of 90 degrees or more during the summer. In areas above 2,500 feet snow normally covers the ground from December through March. The majority of the WAU has been harvested at least once over the past 90 years. There are stands of timber in the upper elevations of the WAU that have never been harvested. The majority of the private lands in the WAU are in plantations less than 25 years old.

*2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).*

The proposed sale area is a representative example of the Reese Creek and the North Fork of Mineral Creek WAU's, at similar elevations and aspects.

b. What is the steepest slope on the site (approximate percent slope)?

Unit #1 The steepest slopes are 75 to 80 percent on 1 percent of the sale area.

Unit #2 The steepest slopes are 70 to75 percent on 1 percent of the sale area.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

| State Soil Survey # | Soil Texture or Soil Complex Name | % Slope | Acres | Mass Wasting Potential | Erosion Potential |
|---|---|---|---|---|---|
| 0485 | V.CINDERY LOAMY SAND | 30-65 | 370 | LOW | MEDIUM |
| 0643 | V.CINDERY SANDY LOAM | 30-65 | 152 | LOW | MEDIUM |
| 0988 | V.CINDERY LOAMY SAND | 30-65 | 127 | LOW | MEDIUM |
| 1186 | V.CINDERY SANDY LOAM | 8-30 | 97 | INSIGNIFIC'T | LOW |
| 0642 | V.CINDERY SANDY LOAM | 8-30 | 77 | INSIGNIFIC'T | LOW |
| 0484 | V.CINDERY LOAMY SAND | 8-30 | 62 | INSIGNIFIC'T | LOW |
| 0990 | V.CINDERY LOAMY SAND | 8-30 | 62 | INSIGNIFIC'T | LOW |
| 0486 | V.CINDERY LOAMY SAND | 65-90 | 55 | HIGH | MEDIUM |
| 0488 | BELLICUM-ROCK OUTCROP-COMPLEX | 65-90 | 49 | No Data | No Data |
| 0487 | BELLICUM-ROCK OUTCROP-COMPLEX | 30-65 | 41 | No Data | No Data |
| 1187 | V.CINDERY SANDY LOAM | 30-65 | 36 | LOW | MEDIUM |
| 1300 | CATTCREEK-ROCK OUTCROP-COMPLEX | 30-65 | 27 | No Data | No Data |
| 6088 | GRAVELLY LOAM | 65-90 | 25 | HIGH | HIGH |
| 3610 | GRAVELLY SILT LOAM | 30-65 | 15 | LOW | MEDIUM |
| 6099 | PHEENEY-ROCK OUTCROP-COMPLEX | 65-90 | 9 | No Data | No Data |
| 6771 | NO DATA | 50-90 | 9 | NO DATA | NO DATA |
| 7526 | V.GRAVELLY SILT LOAM | 30-65 | 9 | LOW | MEDIUM |
| 0989 | V.CINDERY LOAMY SAND | 65-90 | 1 | HIGH | MEDIUM |

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

*1) Surface indications:*

Research and air photo and LiDAR review revealed both deep-seated and shallow-seated landslides within and adjacent to the proposed sale boundaries and in the surrounding area. There are convergent headwalls, inner gorges, bedrock hollows, deep-seated landslides, and other evidence, such as soil creep and benchy and hummocky topography, that cumulatively indicates the presence of potentially unstable slopes. Much of Section 17 (T14N, R06E), for example, appears to have experienced deep-seated landsliding in the past, particularly earthflow- and slump-earthflow-type landsliding. However, it appears that the majority of the deep-seated landslides in the Cougarilla vicinity are dormant-indistinct or relict. The Region Geologist's *Geologic Report* (9/24/04) describes this information in greater detail.

*2) Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

This is documented in *Watershed Analysis for the Mineral and North Fork Mineral Creek WAU's* (Murray Pacific Corporation, 1998), in *Landslide map and inventory, Tilton River-Mineral Creek area, Lewis County, Washington* (Dragovich and Brunengo, 1995), and is discussed in detail in the Region Geologist's Geologic Report (September 24, 2004). Much of the Cougarilla timber sale vicinity is located in the peak rain-on-snow zone, and the most recent mass wasting events in the vicinity appear to have occurred as a result of winter storms in 1996/1997, likely rain-on-snow events. These failures, located west and northwest of the proposed boundaries, were primarily debris-flows that occurred in bedrock hollows, some of which had long run-outs through deeply incised inner gorges.

*3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

According to watershed analysis (Murray Pacific Corporation, 1998), shallow-seated landslides have occurred in the Mineral and North Fork Mineral Creek WAU's as a result of timber harvest and related activity. The above-referenced watershed analysis states that "43% of landslides were associated with logging roads, 43% with clearcuts , and 14% with fires" (p.3-21). The landslides associated with timber harvest activities or roads likely occurred in conjunction with poor harvest methods, railroad line locations and road construction techniques. There have been surface failures on cut and fill slopes within the right of ways of access roads.

*4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

The majority of the proposed thinning sale is located in the North Fork Mineral Creek WAU, for which watershed analysis was completed. Geologic conditions, as well as topographic and other physical conditions are similar to other areas within the sub-basin. As in other regions within the sub-basin, there are areas of steep, convergent topography, some of which are convergent headwalls and bedrock hollows. Furthermore, there are documented failures elsewhere in the sub-basin within inner gorges and on deep-seated landslides.

The activities that will occur under this proposal are not similar to areas where slope failures have previously occurred. No activities, either timber harvest or related activities, will take place on unstable slopes. See slope stability protection measures below.

*5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

Roads and the associate right-of-ways are located to avoid conditions that potentially could result in erosion or surface failures. All unstable slopes and landforms shall be excluded, and areas with indicators suggestive of unstable slopes shall also be excluded if determined, in coordination with the Region Geologist, to cumulatively indicate slope instability. Areas determined to be unstable will be excluded from the harvest area, and a minimum 50-foot-wide buffer will be established around them. Buffers for unstable areas shall be marked with flagging.

Certain areas remain within the proposed sale boundaries that were determined to be low and medium hazard areas. (No harvest will occur in areas rated as high hazard.) Identification of unstable slopes in the low and medium hazard areas will be dealt with as they will be in any area of the sale. The Region Geologist, in coordination with the Contract Administrator (CA) and the Harvester, will evaluate in detail the areas rated as low and medium hazard. If unstable slopes are identified in these areas (or elsewhere), they will be excluded and buffered with a minimum, 50-foot-wide no-cut buffer. Subsequently, the area of unstable slopes and its buffer will be delineated on a map and submitted with the 45-day harvest plan. The Region Geologist, in coordination with the CA, may prescribe a wider buffer on a case-by-case basis.

If the proposed riparian forest restoration strategies are approved through the SEPA process, then thinning will technically be allowed to occur within riparian management zones (RMZ's). However, even if the strategies are approved, no thinning will occur in inner gorges, bedrock hollows, or on otherwise unstable slopes within the RMZ's, and the buffer will be applied.

No skid trails or yarding corridors are currently proposed to cross or traverse along areas of unstable slopes. If for operational reasons, it is *necessary* to yard across an area of unstable slopes, full suspension is required. If full suspension can be achieved without severely damaging standing timber, creating ground disturbance, or cutting trees to create a yarding corridor, then full-suspension yarding is acceptable. Otherwise, a geo-tech will be required to do an on-site evaluation to determine feasibility of yarding through these sensitive features, and the proposal will need to be submitted under a separate forest practice application (FPA) *or* can be submitted as an amendment to the original FPA but must also go through an amendment process in SEPA.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 49 Approx. acreage new landings: 16 Fill source: On site
The fill needed to achieve grade will be generated from the road prism.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some minor erosion may occur, however, prudent construction techniques and normal maintenance practices will minimize, if not eliminate, the amount of erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

The impervious surfacing consists of rock applied to the surface of the roads and landings. This amounts to approximately 4 percent of the sale area.

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
*(Include protection measures for minimizing compaction or rutting.)*

No road construction will be permitted between November 1 and May 31st without written approval from the Contract Administrator. During periods of wet weather conditions the yarding of timber, road construction and hauling will not be permitted if excessive rutting occurs. No ground based yarding will be permitted on slopes greater than 40 percent. Drainage structures will be placed to reduce the velocity and volume of ditch water. The conditions and requirements of the road abandonment plan are intended to minimize the impact of the fine sediments generated from the operation. The road abandonment efforts will consist of the following: constructing non-drivable water bars, keying water bars into ditches, tank trap barriers, removing cross drain culverts and leaving the trench open, sloping trench walls, scattering right of way debris over the road prism and grass seeding exposed soils. In addition, during abandonment, all exposed soils associate with road construction within 100 feet of any live stream will be covered with a 3-inch deep layer of straw.

**2. Air**

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling*, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by truck traffic. If any slash is burned, it will be done in accordance with the State Smoke Management Program.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Does not apply.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

**3. Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

*a) Downstream water bodies:*

Units 1 and 2 lie adjacent to the North Fork Mineral Creek which flows directly into the Nisqually River. Between Units 1 and 2 flows an unnamed type 3 stream which flows directly into the North Fork Mineral

Creek. To the northeast and north of Unit 1 and 2, respectively, lies Reese Creek which drains to the north into the Nisqually River.

b) *Complete the following riparian & wetland management zone table:*

| Wetland, Stream, Lake, Pond, or Saltwater Name (if any) | Water Type | Number (how many?) | Avg RMZ/WMZ Width in Feet (per side for streams) |
|---|---|---|---|
| North Fork Mineral Creek** | 1 | 1 | 180* |
| Un-named Stream | 3 | 1 | 180* |
| Un-named Stream | 4 | 8 | 100* |
| Un-named Stream | 5 | 14 | NONE |

**These buffers are based on the current riparian strategies. See below for description of proposed riparian strategy.*

***An exemption has been applied for to Lewis County for harvesting within 200 feet of the North Fork Mineral Creek.*

c) *List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.*

The location and types of the streams within and adjacent to the proposal are according to the DNR's hydro layer. The types and locations of streams will be verified by the harvester using physical criteria per WAC 222-16-031 in the 1996 emergency Forest Practice Rules. Water type identification and updates, as well as appropriate buffers, will be included in the harvest plan required for the harvester to complete and be approved by the Contract Administrator and Forest Practices prior to harvesting.

Riparian Management Zones (RMZs) and Wetland Management Zones (WMZs) will be marked by the harvester to protect the streams within and adjacent to the sale area. The RMZs and WMZs will meet DNR's Habitat Conservation Plan requirements as outlined in Schedule D.

The Deparmtent of Natural Resources is seeking the approval of Riparian Strategies that would allow thinning within RMZs. Currently, the DNR cannot enter the RMZs to conduct mangement activites. If the proposed strategies are appoved before the start of harvest operations or during the contract period the following riparian prescriptions will be applied to streams within or adjacent to the sale area:

- There will be a 50-foot no cut buffer from the edge of the channel migration zone of all Type 1 through Type 4 streams. The thinning prescription may be applied up to the 50 foot no cut buffer.
- No yarding through Type 1 - 5 waters will be allowed.
- No cable yarding over Type 1 or Type 3 stream
- Cable yarding over type 4 - 5 waters will be allowed with full suspension.
- The thinning prescription will be applied up to the ordinary high water mark of Type 5 streams. However no equipment will operate within 30 feet of the ordinary high water mark.

If the proposed Riparian Strategies are not approved then current requirements for stream buffers will be followed as outlined in Schedule D.

The intent of the RMZs is to protect the water quality of the streams and provide shelter and foraging areas for the riparian species indigenous to the area. The presence and maintenance of the RMZ's will prevent fine sediments generated by the logging operation from entering the surface waters. Their size and locations will assure that water quality is protected. Thinning within the RMZs under the proposed riparian strategies is targeting the growth of large conifers, enhancing structural diversity and providing material for DWD and LWD adjacent to Type 1-4 streams.

Upon completion of harvest activites there will be a sufficient number of trees in the buffers to maintain necessary shade levels and the future dead and down trees needed to provide quality wildlife habitat. Erosion control measures will be applied during these activities in accordance with Forest Practice and HPA requirements to protect water quality.

The construction and installation of the Type 4 water crossing will be in accordance with DNR's blanket HPA.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
*Description (include culverts):*

If proposed riparian strategies are approved, felling and yarding may take place no closer than 50 feet of Type 1 through 4 streams, and up to the ordinary high water mark of the Type 5 streams. There is one proposed road crossing over a Type 4 stream to be used for the hauling of equipment, rock and logs.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☐*No* ☒*Yes, description:*

Yes. A temporary diversion of a Type 4 may be required during the road building/culvert instulation. This will be done according to an approved HPA.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) *Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?*

Yes. Both the Reese Creek and North Fork Mineral Creek WAUs contain soils with high mass wasting potential and high erosion potential. These soils are generally located on steep slopes, on higher elevations. The potential for eroded material to impact streams within the proposal area is mitigated by riparian buffers and buffering unstable slopes from the harvest area.

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:*

The Nisqually River in the Reese Creek WAU and the North Fork Mineral Creek in the North Fork Mineral Creek WAU can be described as being in a constant state of change. This can be attributed to in part to the large areas that each drain. Major changes in the amount of LOD, channel width and location are primarily due to large scale rain on snow events and annual spring runoff, which are natural processes in a dynamic system. The streams that are tributaries also show changes due to major rain on snow events.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☒*No* ☐*Yes, explain:*

The current proposal will not significantly impact stream or water quality. This conclusion is based upon examination of past logging and harvesting activities within the WAU. Some minor erosion may occur although this proposal does not increase the potential for mass wasting or an event that would significantly impact stream or water quality. Erosion control measures will be implemented as described in B1h above to reduce the potential for sediment delivery to surface waters.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*

The Reese Creek WAU contains an average of 2.3 miles of road per square mile. On non-DNR lands the average is 3.1 miles of road per square mile and on the DNR lands the average is 2.0. Approximately 75% of the ditches within the WAU carry water for extended periods of time.

The North Fork Mineral Creek WAU contains an average of 3.8 miles per square mile. On non-DNR lands the average is 4.4 miles of road per square mile and on DNR lands the average is 3.7. Approximately 50% of the ditches within the WAU carry water for extended periods of time.

*Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?*
☒*No* ☐*Yes, describe:*

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not,* ***STOP HERE*** *and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☐*No* ☒*Yes, approximate percent of WAU in significant ROS zone.*

Reese Creek WAU: 60 percent, North Fork Mineral Creek WAU: 34 percent

*Approximate percent of sub-basin(s):*

Reese Creek WAU
Sub-basin #18371 78 percent

North Fork Mineral Creek
Sub-Basin # 18337 100 percent
Sub-Basin # 18338 94 percent
Sub-Basin # 18336 100 percent

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

This information is for DNR managed lands only:

| 1. SUB-BASIN NAME | 2. TOTAL ROS ACRES (DNR) | 3. HYDRO MATURE TARGET ACRES (2/3 of Column 2) | 4. CURRENT DNR ACRES IN HYDRO MATURE FOREST | 5. ACRES OF HYDRO MATURE FOREST TO BE REMOVED | 6. SUPRLUS (+) OR DEFICIT (-) ACRES AFTER ACTIVITY |
|---|---|---|---|---|---|
| SUBBASIN #18371 | 1,850 | 1,221* | 1,329 | 0 | +108 |
| SUBBASIN #18336 | 1,887 | 1,245* | 1,760 | 0 | +515 |
| SUBBASIN #18338 | 4,363 | 2,880* | 3,873 | 0 | +993 |
| SUBBASIN #18337 | 1,075 | 710* | 1055 | 0 | +345 |

*Target acres are based on threshold targets calculated by DNR GIS data of DNR ROS acres.

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

Upon site inspection, significant changes to several un-named stream channels in the Reese Creek WAU and some streams in the North Fork Mineral Creek WAU were found. There are debris dam breaks, debris flows, torrents, and channel dimension changes. Generally the damage is caused by debris torrents and slope failures that have occurred during periods of peak flow caused by major rain-on-snow events delivering directly to streams.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

This proposal is in the same general area as other recent harvesting activities. There is no indication that past, current, or foreseeable future proposals working in combination with this proposal will contribute to a water runoff problem in the Reese Creek or North Fork Mineral Creek WAUs.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒*No* ☐*Yes, possible impacts:*

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

The HCP procedure PR-14-040-006, assessing the hydrological maturity levels, assures that the sub-basins within the rain-on-snow zone will not be allowed to reach a point where they are at risk to contribute to a peak flow problem. This proposal will not significantly affect the acreage of hydrologically mature timber in either WAU since it is a thinning and will remain in a hydrologically mature state following thinning. There will be an increase in the size of the road network. However, this should not create any potential impacts related to increase peak flows during rain-on-snow events. The current guidelines for the HCP implementation include prescriptions that address the potential for peak flow impacts. Finally, this proposal includes the maintenance of cross drains and ditch outs on the haul routes. These structures will ensure that ditch water is deposited on the forest floor and not allowed to flow directly into typed waters. The leave trees will help to minimize soil displacement and surface erosion.

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Does not apply.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Insignificant amounts of motor oil, grease, and hydraulic fluids may leak from equipment or be washed off equipment by rainwater. No lubricants will be disposed of on site.

3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☒*No* ☐*Yes, describe:*

a) *Note protection measures, if any.*

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The location of the culverts (cross drains) will be selected to disperse the collected storm water from the ditches onto the forest floor. The frequent spacing of culverts will minimize the distance water flows before being dispersed onto the forest floor. Consequently, no surface or ditch water will flow directly into existing stream channels. Ditch outs will also be used to channel runoff onto the forest floor. No water runoff will be channeled onto exposed soils.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Minor amounts of lubricants and other petroleum products, which wash off the machinery during periods of rain onto the forest floor, may reach ground waters. The lubricants and petroleum products used by the machinery will not be disposed of on site.

a) *Note protection measures, if any.*

The lubricants and petroleum products used by the machinery will not be disposed of on the site.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
*(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)*

Good landing location, sound construction techniques utilizing the best management practices, adequate ballast and surfacing, seasonal restrictions on construction, hauling and yarding will minimize potential surface erosion problems. The

frequent spacing and placement of the culverts with head walls, catch basins and energy dissipaters, along with the use of ditch outs will reduce or control surface, ground, and water runoff impacts.

**4. Plants**

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☐maple, ☐aspen, ☒*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☐*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☐*other:*
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? *(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)*

Approximately 16,468 mbf of 40-70 year old mixed conifer and hardwood will be harvested from the proposed area. During the felling and yarding process the subordinate vegetation within the sale area will be damaged.

*1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")*

The stands immediately adjacent to the proposed harvest areas are typical of recently harvested areas, young plantations and second growth stands 40 to 70 years old found within the WAU at the same elevation and aspect.

*2) Retention tree plan:*

Upon completion of harvest activities, the average Basal Area measured within the harvest units will be 200 sq. feet per acre, with an average Relative Density of 51.

Leave trees will be selected from the dominant, co-dominant, and intermediate classes. All trees 30 inches Diameter at Breast Height (DBH) or greater and 10 inches DBH or less will be left standing within the thinning units as operations allow. The remainder of the leave trees shall be selected from the best formed trees, as defined by the characteristics below:

1. Tallest tree
2. Straightest bole
3. Smallest diameter limbs
4. Fullest crown
5. Largest diameter

The preferred species selection by priority is as follows: RC, DF, WH, BC, and RA. The leave trees will be selected by comparing the characteristics of the individual trees and selecting those trees that best fit the definition of best formed.

As part of the required leave trees, four living wildlife trees per acre will be selected to leave. Wildlife trees shall be chosen from those trees, which are deformed or damaged. Damaged or deformed trees are defined as having the following characteristics:

1. Multiple tops
2. Broken tops
3. Twists, crooks, and bends
4. Basal area scars
5. Soft decay
6. Large limbs

When deformed or damaged trees are not present wildlife trees may be selected from those trees which meet the best-formed definition.

Additionally, all snags 20 inches DBH or greater, will be left standing. If there are no snags 20 inches or greater available, one snag per acre from the 15" to 20" range will be selected. The snags left standing within the harvest units will receive the appropriate protection for safety. The harvester is not required to leave any unsafe tree. The contractor shall comply with the reserve tree selection guidelines listed in "Guidelines for Selecting Reserve Trees" published by the Washington Department of Labor and Industries.

Downed woody debris measuring 20 inches in diameter or greater will remain on the ground and be disturbed as little as operationally feasible.

c. List threatened or endangered *plant* species known to be on or near the site.

| TSU_Number | FMU_ID | Common Name | Federal Listing Status | WA State Listing Status |
|---|---|---|---|---|
| None Found in Database Search | | | | |

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None.

**5. Animal**

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☐eagle, ☐songbirds, ☐*pigeon*, ☐other:
mammals: ☒deer, ☒bear, ☒elk, ☐beaver, ☐other:
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:
*unique habitats:* ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

| TSU Number | FMU_ID | Common Name | Federal Listing Status | WA State Listing Status |
|---|---|---|---|---|
| None Found in Database Search | | | | |

The proposed sale area is in designated northern spotted owl dispersal habitat. The intent of this proposal is to enhance structural complexity in the stand and improve dispersal habitat for the northern spotted owl.

Currently the Reese Creek WAU contains 77.5 percent dispersal habitat, and the North Fork Mineral Creek WAU (Central Tahoma Habitat Analysis Unit) 45.7 percent dispersal habitat, information from the DNR's GIS system was used to determine the level of dispersal habitat for each WAU. This proposal combined with all other sales to be offered from July 1, 2004 to July 1, 2005 will not reduce the current dispersal levels in each WAU.

A review of the available information served as a check, to assure that the latest information from the Washington Department of Fish and Wildlife and the DNR's GIS system was being used.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*
Most of western Washington is located in the Pacific flyway.

d. Proposed measures to preserve or enhance wildlife, if any:

See 4.b.2. above for wildlife tree selection criteria.

The development of the leave trees and the existing snags over time will promote structural diversity, assure the development of a biological legacy, while providing nesting, foraging, roosting habitat for cavity dwellers known to use the area.

The proposed unit will have buffers protecting the streams and wetlands within and adjacent to the sale area. The RMZs and WMZs, while protecting the water quality of the streams and wetlands, will provide shelter and foraging areas for wetland and riparian dependent species indigenous to the area. Thinning operations will occur outside the inner core area of the RMZ's if the HCP riparian strategies are adopted during the contract period. The inner core will not be entered, to preserve the riparian habitat. If the proposed Riparian Strategies are not approved then current requirements for stream buffers will be followed as outlined in Schedule D.

1) *Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.*
Species /Habitat: Riparian — Protection Measures: Riparian Strategies
Species /Habitat: Dispersal Habitat — Protection Measures: Threshold Levels

**6. Energy and Natural Resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Petroleum products used for equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Does not apply.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

**7. Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There may be minimal hazards, such as minor fuel spills, and fires.

1) Describe special emergency services that might be required.

The Department of Natural Resources, Private, and Rural Fire Department suppression crews may be needed in case of wildfire. Emergency medical services for personnel injuries. Hazardous material spills may require Department of Ecology and/or county assistance.

2) Proposed measures to reduce or control environmental health hazards, if any:

Compliance with State fire laws, fire equipment will be required on site during the closed fire season.
Operations will cease if relative humidity falls below 30 percent.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

There will be short-term, low-level and high level noise created by the use of harvesting equipment within the sale area. This type of noise has been historically present in this geographical area. The typical hours of operation will be Monday through Friday from 6:00 a.m. to 5:00 p.m.

3) Proposed measures to reduce or control noise impacts, if any:

None.

**8. Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*
Timber production and Forest Management.

b. Has the site been used for agriculture? If so, describe.
No.

c. Describe any structures on the site.
None.

d. Will any structures be demolished? If so, what?
No.

e. What is the current zoning classification of the site?
Forest Resource Zone.

f. What is the current comprehensive plan designation of the site?
Timber Production.

g. If applicable, what is the current shoreline master program designation of the site?
Does not apply.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
No.

i. Approximately how many people would reside or work in the completed project?
Does not apply.

j. Approximately how many people would the completed project displace?
None.

k. Proposed measures to avoid or reduce displacement impacts, if any:
None.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
This proposal is located in the Forest Resource Zone of Lewis County. The current proposal is compatible with that designation. The use of harvest planning information, adherence to the Forestry Handbook along with information taken from DNR's GIS system assure that this proposal is compatible with the existing and projected land uses and plans.

**9. Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Does not apply.

c. Proposed measures to reduce or control housing impacts, if any:
Does not apply.

**10. Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?
Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

The proposal is a thinning operation that will leave an average of 150 stems per acre on the landscape. There will be little change to the background and middleground views. The evidence of thinning, such as slash and yarding corridors, will be visible in the foreground as seen from the forest roads near the proposed harvest area for a short period of time.

*1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☒*No* ☐*Yes, viewing location:*

*2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*

☒*No* ☐*Yes, scenic corridor name:*

3) *How will this proposal affect any views described in 1) or 2) above?*

Does not apply.

c. Proposed measures to reduce or control aesthetic impacts, if any:

None.

**11. Light and Glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Does not apply.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
Does not apply.

c. What existing off-site sources of light or glare may affect your proposal?
Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:
None.

**12. Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?
There are informal recreational activities such as hiking, fishing and hunting in and around the Reese Creek drainage.

b. Would the proposed project displace any existing recreational uses? If so, describe:
No existing recreational uses would be displaced.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

**13. Historic and Cultural Preservation**

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
None known.

c. Proposed measures to reduce or control impacts, if any:
*(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)*
None known.

**14. Transportation**

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The Tahoma State Forest is accessed from Highway 7 and Highway 706.

1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

Traffic from this operation will temporarily increase noise, dust and vehicle density that may result in a decrease in safety. Truck traffic from this individual operation should not increase the need for public maintenance.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
No, the nearest public transit is 30 miles away in Eatonville.

c. How many parking spaces would the completed project have? How many would the project eliminate?
Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Yes, refer to the roads information in A. 11 of this document. See the attached timber sale map.

1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*
There will not be any increase over historical norm.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
There will be 10 to 12 round trips per day while the operation is active. Peak volumes would occur during the yarding and loading activities between 6 am and 5 pm of the operating period.

b. Proposed measures to reduce or control direct impacts on public services, if any.
None.

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**16. Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
None.

**C. SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

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Completed by: Edward S Keeley — Date: 08/9/04
Operations Forester

Reviewed by: Herb Cargill — Date: 9/3/04
Operations Manager

Approved by: _____ — Date: Nov. 15th 2004
Eric Schroff, South Puget Sound Region Manager
NWS 11-12-04